Amendments to the Claims

1-45. (canceled)

46. (new) A microfluidics device comprising:

a substrate having an upper surface;

a channel network formed in said substrate comprising a supply channel and a drain channel, both intersecting an electrolyte channel, wherein said supply channel and drain channel intersecting said electrolyte channel at a supply port and drain port, respectively, such that a geometrically defined sample volume is defined by a section of said electrolyte channel located between said supply port and said drain port; and

means for electrokinetically injecting a sample into the device which reflects the original sample composition.

47. (new) The device of claim 46, wherein said supply channel and drain channel are each inclined with respect to the electrolyte channel.

48. (new) The device of claim 46, wherein said supply channel and drain channel each have a resistance to flow with respect to said electrolyte channel that is about 5% lower than the respective resistance to flow of said electrolyte channel.

49. (new) The device of claim 46, wherein said supply channel and drain channel each has a width that is at least about two times greater than a width of said supply port and drain port, respectively.

50. (new) The device of claim 46, wherein said supply and drain ports have a longitudinal extension which corresponds to at least about the width of said supply port and drain port, respectively, and said widths are about constant along the extension of said supply port and drain port.

51. (new) The device of claim 50, wherein said supply channel and said drain channel are each inclined with respect to said longitudinal extension at an angle that amounts to from about 5 degrees to about 175 degrees.

52. (new) The device of claim 46, wherein at least one of said supply channel, drain channel, and electrolyte channel has a depth of from about 0.1 um to about 100 um.

53. (new) The device of claim 46, wherein said supply port and drain port are spaced apart from each other a distance which amounts to from about 0 um to about 3 cm, preferably about 3 mm.

54. (new) The device of claim 46, further comprising:

a lid covering said substrate and enclosing said channel network.

55. (new) The device of claim 54, further comprising:

a plurality of waveguide ports formed in said lid at al plurality of positions along the electrolyte channel through which an optical detection system can detect the optical properties of sample components moving through the electrolyte channel at a plurality of different positions along the electrolyte channel.

56. (new) The device of claim 46, further comprising

a reservoir and a waste receptacle in fluid communication with said electrolyte channel.

57. (new) The device of claim 46, wherein said supply port and drain port are offset along the length of the electrolyte channel.

58. (new) The device of claim 46, wherein said supply channel and drain channel are on opposite sides of the electrolyte channel.

59. (new) The device of claim 46, wherein said supply channel and drain channel are on the same side of the electrolyte channel.

60. (new) The device of claim 46, further comprising:

a fourth channel intersecting the electrolyte channel at a third port disposed between said supply port and drain port.

61. (new) The device of claim 46, wherein said means for electrokinetically injecting the sample comprises a first electrode operatively connected to said supply channel and a second electrode operatively connected to said drain channel.

62. (new) The device of claim 61, further comprising:

a third electrode operatively connected to said electrolyte channel for moving the defined sample along the electrolyte channel.

63. (new) The device of claim 62, wherein said first and second electrodes have a first electric potential and said third electrode has a second potential wherein the potential difference between the first and second potential is such that a resultant electric field strength amounts to about 0.1V/cm.